

DRAFT RULE 322 – January 18, 2001
For Public Workshop on 2/1/01
Contact: Patty Nelson, Phone (602) 506-6709, Fax (602) 506-6179.
Email: pnelson@mail.maricopa.gov
Comments due on 2/16/01

REGULATION III - CONTROL OF AIR CONTAMINANTS

NEW RULE 322

FUEL BURNING EQUIPMENT POWER PLANT OPERATIONS

INDEX

SECTION 100 - GENERAL

- 101 PURPOSE
- 102 APPLICABILITY
- 103 EXEMPTIONS

SECTION 200 - DEFINITIONS

- 201 ANNUAL CAPACITY FACTOR
- ~~AUXILIARY BURNERS~~
- ~~2032~~ BOILER
- ~~2032~~ COGENERATION STEAM GENERATING UNIT
- ~~20203~~ COMBINED CYCLE GAS TURBINE
- 204 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)
- ~~2057~~ COOLING TOWERS
- ~~2052068~~ DISTILLATE OIL
- ~~2079~~ DRIFT
- ~~2408~~ DRIFT-FACTOR RATE
- ~~24094~~ ELECTRIC UTILITY STATIONARY GAS TURBINE
- ~~210206~~ ELECTRIC UTILITY STEAM GENERATING UNIT

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

211 EMERGENCY FUEL

21~~23~~07 EMISSION CONTROL SYSTEM (ECS)

21~~34~~08 FOSSIL FUEL

21~~45~~09 FOSSIL-FUEL-FIRED STEAM GENERATOR

21~~56~~5 HEAT INPUT

~~211~~ ~~HEAT RELEASE RATE~~

21~~67~~6 HIGH EFFICIENCY DRIFT ELIMINATORS

217 ICE FOG

21~~88~~72 LOW SULFUR OIL

21~~99~~8 NOX

220 OIL

221 OPACITY

22~~22~~14 PARTICULATE MATTER

22~~32~~45 PARTICULATE MATTER EMISSIONS

224 PEAK LOAD

~~22~~REGENERATIVE CYCLE GAS TURBINE

225 RESIDUAL OIL

226 SENSIBLE HEAT

227 SHUT - DOWN

2278 SIMPLE CYCLE GAS TURBINE

229 START-UP

230~~28~~ STATIONARY GAS TURBINE

231~~299~~ TOTAL DISSOLVED SOLIDS (TDS)

232 UNCOMBINED WATER

DRAFT RULE 322 – January 18, 2001
For Public Workshop on 2/1/01
Contact: Patty Nelson, Phone (602) 506-6709, Fax (602) 506-6179.
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Comments due on 2/16/01

SECTION 300 - STANDARDS

301 LIMITATIONS – PARTICULATE MATTER

302 ~~LIMITATIONS - OPACITY~~

302303 LIMITATIONS – SULFUR IN FUEL

303304 LIMITATIONS – NITROGEN OXIDES

305 LIMITATIONS – CARBON MONOXIDE

306 ~~EXCEPTIONS TO STANDARDS~~

30754 REQUIREMENTS FOR AIR POLLUTION CONTROL
EQUIPMENT AND ECS MONITORING EQUIPMENT

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE ~~–O&M PLAN~~

SECTION 500 - MONITORING AND RECORDS

~~501—PROVIDING AND MAINTAINING RECORDS~~

5012 RECORD KEEPING AND REPORTING

~~503~~502 RECORDS RETENTION

503 COMPLIANCE DETERMINATION

504 TEST METHODS ADOPTED BY REFERENCE

DRAFT RULE 322 – January 18, 2001
For Public Workshop on 2/1/01
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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 322

FUEL BURNING EQUIPMENT POWER PLANT OPERATIONS

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the discharge of ~~certain pollutants~~ nitrogen oxides, sulfur dioxides, particulate matter and carbon monoxide into the atmosphere from stationary fossil fuel burning equipment emitted from power plant operations by establishing emission rates for this equipment based upon heat input ~~and~~and/or type of fuel usage and to limit also the discharge of particulate matter ~~concentration~~ from ~~cooling towers associated with this fuel burning this~~ equipment and associated cooling towers.
- 102 APPLICABILITY:** This rule applies to any of the following types of liquid or gaseous fossil fuel burning stationary equipment and only those cooling towers that are associated with this equipment:
- 102.1** Each ~~fossil fuel generator-electric utility steam generating boiler-unit~~ used to generate electric power that has a heat input of equal to or greater ~~equal to or more than~~ 250 100 million (MM) Btu/hour (~~73-29~~ MW ~~megawatts~~).
- 102.2** Each electric utility combined cycle gas turbine that is capable of combusting more than 100 million (MM) Btu/hour (29 MW ~~megawatts~~) heat input of fossil fuel in the steam generating unit. Only emissions resulting from combustion of fuels in the steam generating unit are the applicable emissions in this subsection 102.2. The applicability of gas turbine emissions are addressed in subsection 102.3.
- 102.3** Each ~~electric utility steam generating unit or electric utility combined cycle stationary-electric utility~~ gas turbine with a heat input at peak load equal to or

DRAFT RULE 322 – January 18, 2001

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Comments due on 2/16/01

~~greater than 0.3 2.9 MW megawatts. capable of combusting more than 100 million (MM) Btu/hour (29 megawatts) heat input of fossil fuel either alone or in combination with any other fuel.~~

~~102.3 Each industrial commercial institutional steam generating unit that has a heat input capacity from fuels combusted in the steam generating unit of greater than 100 MM Btu/hour.~~

~~102.4 Each small industrial commercial institutional steam generating unit that has a heat input capacity of less than 100 MM Btu/hour but more than 10 MM Btu/hour.~~

103 **EXEMPTIONS:** ~~This rule shall not apply to any fuel burning equipment from a source that is subject to Rule 313 or Rule 317. Section 303 shall not apply to industrial commercial institutional steam generating units that have a heat input capacity of less than 100 MM Btu/hour. The standards in provisions in this rule shall not apply to the following types of equipment:~~

~~103.1 Nuclear power plant Equipment associated with nuclear power plant operations.~~

~~103.2 Reciprocating internal combustion equipment.~~

~~Auxiliary burners~~

~~Emergency standby equipment that is operated for emergency power only and that is demonstrated to operate less than 200 hours per year.~~

~~Equipment operated exclusively for firefighting and flood control~~

~~Equipment operated solely for research and testing for the advancement of boiler or turbine technology~~

~~Equipment operating during startup, shutdown or unavoidable breakdown per Rule 140 of the Maricopa County Air Pollution Control Rules and Regulations.~~

~~103.3 Stationary gas turbines listed in subsection 102.3 are exempt from Sections 301, 303 and subsection 305.3 (b) of this rule in the following cases:~~

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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- a. Stationary gas turbines operated for firefighting, flood control and at military training facilities for use in other than a garrison facility.
- b. Stationary gas turbines engaged by manufacturers in research and the development of equipment for both gas turbine emission control techniques and gas turbine efficiency improvements. These particular units will be exempted on a case-by-case basis by the Control Officer.
- c. Stationary gas turbines when fired with an emergency fuel that are normally fired with natural gas.
- d. Stationary gas turbines that use water or steam to control NOx emissions when ice fog is deemed a traffic hazard by the owner or operator.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

201 ANNUAL CAPACITY FACTOR –The ratio between the ~~actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam each a separate source (such as stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.~~ amount of fuel actually burned by a unit in a calendar year to the amount of fuel it could have burned if it had operated at the rated heat input capacity for 100 % of the time during the calendar year.

~~**202 AUXILIARY BURNER**— Any fuel burning device that increases the heat content of exhaust gas from a gas turbine including duct burners, fired waste heat boilers and fired heat recovery steam generators.~~

~~**203 BOILER**— Any external combustion equipment fired with liquid and/or gaseous fuel, which is primarily used to produce steam or hot water that is expanded in a turbine generator used for electric power generation.~~

2032024 COGENERATION STEAM GENERATING UNIT – A steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

DRAFT RULE 322 – January 18, 2001

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2042035 **COMBINED CYCLE GAS TURBINE** – A type of electric utility combustion system wherein a separate source such as a gas turbine provides gas to a heat recovery steam generating system. A stationary turbine combustion system wh heat from the exhaust gases generated by the gas turbine s recovered by a –. The steam generating part of the system then provides the energy source for electrical generation.

2046 **CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)** – The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide and oxygen or carbon dioxide and to provide a permanent data record.

2057 **COOLING TOWERS** – Open water recirculating devices that use fans or natural draft to draw or force air through the device to cool water by evaporation and direct contact.

20865 **DISTILLATE OIL** – A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D39-78, “Standard Specification for Fuel Oils.”

2079 **DRIFT** – Water droplets, bubbles and particulate matter that escape from cooling tower stacks.

208 **DRIFT RATE OR FACTOR** - Percentage (%) of drift that passes through a high efficiency drift eliminator on a cooling tower. Also called drift loss.

24094 **ELECTRIC UTILITY STATIONARY GAS TURBINE** – Any stationary gas turbine that is constructed for the purpose of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale.

210206 **ELECTRIC UTILITY STEAM GENERATING UNIT** – Any steam electric generating unit that uses fossil fuel and that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW-megawatts electric output to any utility power distribution system for sale.

211 **EMERGENCY FUEL** – Fuel fired by a gas turbine only during circumstances such as natural gas supply curtailment or breakdown of delivery system that makes it impossible to fire natural gas in the turbine.

DRAFT RULE 322 – January 18, 2001

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Comments due on 2/16/01

212307 **EMISSION CONTROL SYSTEM (ECS)** - A system approved in writing by the Control Officer, designed and operated in accordance with good engineering practice to reduce emissions of particulate matter. Such system consists of an emissions collection subsystem and an emissions processing subsystem.

213408 **FOSSIL FUEL** – Naturally occurring carbonaceous substances from the ground such as Nnatural gas, petroleum, coal and any form of solid, liquid or gaseous fuel derived from such material for the purpose of creating ~~useful~~ heat.

214509 **FOSSIL-FUEL-FIRED STEAM GENERATOR** – A ~~furnace or~~ boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

21560 **HEAT INPUT** – Heat derived from the combustion of fuel in a steam generating unit and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines and kilns.

216 **ICE FOG** – An atmospheric suspension of highly reflective ice crystals.

~~211~~ **HEAT RELEASE RATE** – The steam generating unit design heat input capacity (in MW or Btu/hour) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes. Release rates may be classified as high or low.

~~a. High Release Rate – heat release rate greater than 730,000 J/sec m³ (70,000 Btu/hour ft³).~~

~~b. Low Release Rate – heat release rate of 730,000 J/sec m³ or less (70,000 Btu/hour ft³).~~

217 **HIGH EFFICIENCY DRIFT ELIMINATOR** – Device that removes liquid droplets and particulate matter from cooling tower exhaust air by relying on rapid changes in velocity and direction of air-droplet mixtures by impaction on eliminator passage surfaces.

DRAFT RULE 322 – January 18, 2001

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21882 LOW SULFUR OIL – Fuel oil containing less than or equal to 0.05 percent by weight of sulfur.

2199 NO_x – Oxides of nitrogen calculated as equivalent nitrogen dioxide.

220 OIL – Crude oil ~~or~~, petroleum or a liquid fuel derived from crude oil or petroleum including distillate and residual oil.

221 OPACITY - A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the view of an observer.

214210222 PARTICULATE MATTER - Any material, except condensed water containing no more than analytical trace amounts of other chemical elements or compounds, which has a nominal aerodynamic diameter smaller than 100 microns (micrometers), and which exists in a finely divided form as a liquid or solid at actual conditions.

2232215 PARTICULATE MATTER EMISSIONS - Any and all finely divided solid or liquid materials other than condensed water, emitted to the ambient air as measured by applicable state and federal test methods.

2243 PEAK LOAD – 100% of the manufacturer's design capacity of a gas turbine at 288° Kelvin, 60% relative humidity and 101.3 kilopascals pressure (ISO standard day conditions).

225216 RESIDUAL OIL – The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396-78, "Standard Specifications for Fuel Oils."

226 SENSIBLE HEAT - Heat, the addition or removal of which results in a change of temperature that can be detected by a sensing device.

227 SHUT-DOWN – The period of time during which a steam generator is allowed to cool from its normal temperature range to a cold or ambient temperature.

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2287 **SIMPLE CYCLE GAS TURBINE** – Any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

229 **START-UP** – The period of time during which a steam generator or gas turbine is heated up to its normal operating temperature range from a cold or ambient temperature.

22830 **STATIONARY GAS TURBINE** – Any stationary simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating unit that is not self propelled.

~~**217** **STEAM GENERATING UNIT** – Any furnace, boiler or other device used for combusting fuel for the purpose of producing steam (including fossil-fuel fired steam generators associated with combined cycle gas turbines; nuclear steam generators are not included).~~

23129 **TOTAL DISSOLVED SOLIDS (TDS)** – The amount of concentrated matter reported in mg/l or ppm left after filtration of a well-mixed sample through a standard glass fiber filter and the filtrate is evaporated to dryness at 180° C.

232 **UNCOMBINED WATER** – Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

SECTION 300 – STANDARDS

301 **LIMITATIONS - PARTICULATE MATTER:** No person shall discharge, cause or allow the discharge of particulate matter emissions: ~~caused by combustion of fuel, from any fuel burning fossil-fuel burning equipment listed in Section 102 operation in excess of amounts listed in subsections 3041.1 through 301.24.~~ of this rule.

301.1 From any stationary fossil fuel burning equipment listed in subsection 102.1 and 102.2 of this rule, in excess of 0.03 lbs. per million Btu heat input.

301.2 Each cooling tower associated with applicable units listed in Section 102 shall be equipped with a high efficiency drift eliminator to reduce particulate matter

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emissions. The high efficiency drift eliminator shall be designed with a drift rate of at least 0.001% and shall not be manufactured out of wood. The maximum allowable TDS concentration of the water used in the tower shall be 20,000 ppm.

302 LIMITATIONS – OPACITY: No person shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity.

~~301.1 For fossil fuel fired steam generators electric utility steam generating boilers that has a with heat input of equal to or more than 250 million greater than 100 MM Btu (73 29 megawatts) per hour, no owner or operator shall cause to be discharged into the atmosphere any gases which:~~

~~a. Contain particulate matter in excess of 0.1003 lbs. per million Btu heat input derived from fossil fuel or fossil fuel and wood residue.~~

~~b. Exhibits greater than 20 % opacity except for one six minute period per hour of not more than 27 % opacity.~~

~~301.2 For electric utility steam generating units or electric utility combined cycle gas turbines that are capable of combusting electric utility combined cycle gas turbines with a heat input of equal to or more than more than 250 100 million Btu (73 (29 megawatts) per hour heat input of fossil fuel alone or in combination with other fuels in the steam generator, no owner or operator shall cause to be discharged into the atmosphere any gases resulting from combustion of fuels in the steam generating unit which:~~

~~a. Contain particulate matter in excess of 0.03 lbs. per million Btu heat input derived from fossil fuel~~

~~b. Exhibits greater than 20 % opacity~~

~~301. Each cooling tower associated with applicable units listed in Section 102 shall be equipped with a high efficiency drift eliminator to reduce particulate matter emissions. The high efficiency drift eliminator shall be designed with a drift factor~~

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~~of at least 0.001% and shall not be manufactured out of wood. The maximum allowable TDS concentration of the water used in the tower shall be 20,000 ppm.~~

~~a. Contains particulate matter in excess of 0.03 lbs. per million Btu heat input derived from fossil fuel or fossil fuel and wood residue.~~

~~b. Exhibits greater than 20 % opacity except for one six minute period per hour of not more than 27% opacity.~~

~~301.3 For any large industrial commercial institutional steam generating units that have a heat input capacity from oils or a mixture of oils combusted in the steam generating unit of greater than 100 MM Btu/hour, no owner or operator shall cause to be discharged into the atmosphere any gases which:~~

~~a. Contain particulate matter in excess of 0.10 lb./million Btu.~~

~~b. Exhibits greater than 20% opacity except for one six minute period per hour of not more than 27% opacity.~~

~~301.4 For small industrial commercial institutional steam generating units that have a maximum design heat capacity of 100 MM Btu per hour or less, but greater than or equal to 10MM Btu per hour, no owner or operator shall cause to be discharged into the atmosphere any gases which:~~

~~a. Contain particulate matter in excess of 0.10 lb/MM Btu.~~

~~b. Exhibits greater than 20% opacity except for one six minute period per hour of not more than 27% opacity.~~

3032 LIMITATIONS – SULFUR IN FUEL: ~~All fossil fuel fired steam generators, combined cycle gas turbines electric utility steam generating units steam generators and boilers that are applicable units in Section 502~~ An owner or operator of any applicable fossil fuel burning equipment listed in Section 102 that burns solely liquid fuel oil with a resulting discharge of sulfur dioxide in the facility's effluent gases shall use only low sulfur oil with the following exceptions:

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303.1 Existing supplies in storage of any liquid fuel or any used oil with sulfur content ~~higher- greater~~ than 0.05% by weight ~~of sulfur~~ may be used by the owner or operator until (insert 1.5 years after adoption of rule). This usage shall be reported to the Control Officer along with the dates of usage.

~~—If sufficient quantities of low sulfur oil are not available for use by an owner or operator then the owner or operator must prove to the Control Officer that low sulfur oil is not available. The owner or operator must also prove to the Control Officer that he has adequate contingency plans and facilities to insure that usage of high sulfur oil will not violate the National Ambient Air Quality Standards before the Control Officer approves this usage.~~

~~Any amounts of existing liquid fuel or used oil with a sulfur content of greater than 0.05% by weight of sulfur that will be used by the owner or operator, shall be reported to the Control Officer along with the dates of usage.~~

~~**302.2.1** — An owner or operator shall report to the Control Office
r existing liquid fuel inventory of sulfur than 0.05% by weight of sulfur.~~

303.2 Fuel burning equipment that uses only natural gas is exempt from the sulfur limitations in ~~subsection 302.2.~~ Section 303.

3043 **LIMITATIONS – NITROGEN OXIDES:** No owner or operator of any applicable unit- fossil fuel burning equipment that is listed in Section 102 which commenced construction or a major modification after May 30, 1972 ~~Subsections 303.1 through 303.5~~ that ~~produces~~ generates electric power shall cause to be discharged into the atmosphere any gases with nitrogen oxides, expressed as NO₂ in excess of the following limits:

3043.1 0.20 lb. per MM Btu derived from gaseous fossil fuel, maximum three hour average, calculated as nitrogen dioxide.

3043.2 0.30 lb. per MM Btu derived from liquid fossil fuel, maximum three hour average, calculated as nitrogen dioxide.

~~303.1 0.20 lb per MM Btu derived from gaseous fossil fuel in fossil fuel fired steam generating units and electric utility steam generating plants.~~

DRAFT RULE 322 – January 18, 2001

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Comments due on 2/16/01

~~303.2 0.30 lb per MM Btu derived from liquid fossil fuel in fossil fuel fired steam generating units and electric utility steam generating plants.~~

~~303.3 0.70 lb per MM Btu derived from solid fossil fuel in fossil fuel fired steam generating units.~~

~~303.4 0.60 lb. per MM Btu derived from solid fossil fuel in electric utility steam generating units.~~

~~303.5 For Industrial Commercial Institutional Steam Generating Units that have a heat input capacity from fuels combusted in the steam generating unit of greater than 100 MM Btu, the following emission units for NO₂ shall apply:~~

~~a. For natural gas and distillate oil with a low heat release rate, the NO₂ emission limits shall be 0.10 lb. per MM Btu.~~

~~b. For natural gas and distillate oil with a high release rate, the NO₂ emission limits shall be 0.20 lb. per MM Btu.~~

~~c. For residual oil with a low release rate, the NO₂ emission limits shall be 0.30 lb. per MM Btu.~~

~~d. For residual oil with a high release rate, the NO₂ emission limits shall be 0.40 lbs. per MM Btu.~~

~~e. For a duct burner used in a combined cycle system that combusts both natural gas and distillate oil, the NO₂ emission limits shall be 0.20 lbs. per MM Btu.~~

~~f. For a duct burner used in a combined cycle system that combusts only residual oil, the NO₂ emission limits shall be 0.40 lbs. per MM Btu.~~

~~Compliance with NO₂ emission limits shall be based upon a 30 day rolling average.~~

305 **LIMITATIONS - CARBON MONOXIDE:** No owner or operator of any applicable fossil fuel burning equipment listed in Section 102 of this rule shall exceed 400 ppmv of

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carbon monoxide measured during steady state compliance source testing or 1000 ppmv measured as recorded by a continuous emission monitoring system during normal operation, if applicable, dry at 3% oxygen, based on a 24-hour average. (~~or shall we limit this CO limitation to units listed in section 305 that are larger and require CEMS?~~)

306 EXCEPTIONS TO STANDARDS -

306.1 START-UP AND SHUT-DOWN:

- a. Visible emissions exceeding the opacity standards in Section 302 for short periods of time resulting from start-up and shut-down which do not exceed three minutes in length shall not constitute a violation provided that the Control Officer finds that adequate control technology has been applied for any equipment listed in Section 102. At no time during these exceptions shall the opacity of any plume or effluent from any of these combustion units, other than uncombined water, ever exceed 40%.
- b. The particulate matter emissions standard in Section 301 and the nitrogen oxides standard in Section 304 also do not apply during start-up and shut-down of any equipment listed in Section 102.

304307 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:

3057.1 Emission Control System Required: For affected operations which may exceed any of the applicable standards set forth in Sections 3040 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS).

307.2 Providing and Maintaining ECS Monitoring Devices: No person required to use an approved emission control system to control particulate emissions pursuant to this rule shall do so without first providing properly installing, operating and maintaining in calibration and in good working order, devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is

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Comments due on 2/16/01

functioning properly and is properly maintained as described in an approved O&M Plan.

307.32 Operation and Maintenance (O&M) Plan Required For ECS:

- a. An owner or operator shall provide and maintain (an) O&M Plan for any ECS, any other emission processing equipment, and also address any ECS monitoring devices that are used pursuant to this rule or to an air pollution permit.
- b. The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device which should also address any ECS monitoring devices that is are used pursuant to this rule.
- c. The owner or operator shall comply with all of the identified actions and schedules provided in each O&M Plan.
- d. If the owner or operator is also subject to Title V, New Source Performance Standards or Maximum Achievable Control Technology (MACT) Standards and maintains a periodic monitoring plan, compliance assurance plan and emissions monitoring plan per these Maricopa County Air Pollution Control regulations that has been approved by the Control Officer, this information may be submitted as an O&M plan and a separate O&M Plan will not be required if the Control Officer approves the plan.

~~**304.3 Providing and Maintaining ECS Monitoring Devices:** No person required to use an approved emission control system to control particulate emissions pursuant to this rule shall do so without first providing properly installing, operating and maintaining in calibration and in good working order, devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained as described in an approved O&M Plan.~~

307.4 Continuous Emission Monitoring Systems (CEMS):

DRAFT RULE 322 – January 18, 2001

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~~a. Each fossil fuel fired electric utility steam generating boiler or combined cycle turbine with a heat input over 250 MM Btu with an annual average capacity factor of greater than 30 % as reported to the Federal Power Commission for the year of 1974 shall comply with the continuous source emission monitoring requirements in subsection 302.1a,c and d of Rule 245 in the Maricopa County Air Pollution Rules and Regulations.~~

~~b. Each electric utility combined cycle gas turbine that is capable of combusting more than 100 MM Btu/hr. of fossil fuel in the steam generating unit with an annual average capacity factor of greater than 30 % as reported to the Federal Power Commission for the year of 1974 shall comply with the continuous source emission monitoring requirements in subsection 302.1a,c and d of Rule 245 in the Maricopa County Air Pollution Rules and Regulations.~~

~~c. Each stationary electric utility gas turbine with a heat input at peak load equal or greater than 10 MW with an annual average capacity factor of greater than 30 % as reported to the Federal Power Commission for the year of 1974 shall comply with the continuous source emission monitoring requirements in subsection 302.1a,c and d of Rule 245 in the Maricopa County Air Pollution Rules and Regulations.~~

- a. The owner or operator of any affected combustion unit listed in subsection 102.1 with a heat input greater than 250 MM Btu/hr that burns solely oil or as a mixture of oil and gas, shall install, calibrate, maintain and operate a continuous monitoring system (CEMS) for the measurement of opacity which meets the performance specifications of Rule 245 subsection 303.1.
- b. The owner or operator of an affected combustion unit listed in subsection 102.1 and 102.2 with a heat input of greater than 250 MM Btu/hr shall install, calibrate, maintain and operate a CEMS, and record the output of the system, for measuring nitrous oxides and oxygen or carbon dioxide discharged to the atmosphere. The CEMS shall comply with the provisions for CEMS in 40 CFR Subpart Da, Part 60, 60.47.
- c. The owner or operator of an affected stationary gas turbine as listed in subsection 102.3 shall monitor emissions of nitrous oxides by compliance

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

with the provisions for monitoring of operations as listed in CFR Subpart GG, Part 60, 60.334.

307.5 EXCEPTIONS TO CEMS:

- a. For any units listed in subsection 102.1 with a heat input of equal to or greater than 100 MM Btu/hr but less than 250 MM Btu/hr, parametric monitoring and good combustion practices shall be used to demonstrate compliance in lieu of a CEMS for opacity, nitrous oxides and oxygen or carbon dioxide.
- b. For any units listed in subsection 102.2 that is capable of combusting more than a 100 MM Btu/hr heat input of fossil fuel in the steam generating unit but less than 250 MM Btu/hr, parametric monitoring and good combustion practices shall be used to demonstrate compliance in lieu of a CEMS for opacity, nitrous oxides and oxygen or carbon dioxide.
- c. The owner or operator of any affected unit listed in Section 102 that requires a CEMS for nitrogen oxides that already meets the requirements of 40 CFR Part 75 and is continuing to meet the requirements of Part 75 and has been approved by the Control Officer, may use that CEMS to meet the requirements of this subsection.

~~305.4 Alternative Monitoring: The electric utility units that are not listed in subsection 305.3 will be monitored for pollutant emissions by conductance of an initial source test which will establish surrogate parameters which typically include flow rate, flue gas flow rate, flue gas temperature, fuel Btu content, revolutions per minute (if applicable for the unit), load, electrical energy produced, ambient air temperature and pressure and injection rates (if applicable).~~

~~305.5 Providing and Maintaining ECS Monitoring Devices: No person required to use an approved emission control system to control particulate emissions pursuant to this rule shall do so without first providing properly installing, operating and maintaining in calibration and in good working order, devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions necessary to determine if air~~

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

~~pollution control equipment is functioning properly and is properly maintained as described in an approved O&M Plan.~~

~~**304.4 Continuous Emission Monitoring Systems:** The owner or operator of a facility subject to this rule, shall install, calibrate, maintain and operate a continuous monitoring system and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere, for measuring the amount of NO₂ discharged to the atmosphere or the owner or operator may request the Control Officer to approve an alternative monitoring device.~~

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE

401.1 Operation and Maintenance (O&M) Plan: Any person employing an approved emission control system on the effective date of this rule shall by (insert 6 mos. after rule is adopted) file an O&M Plan with the Control Officer in accordance with Subsection 3075.326 of this rule.

401.2 ~~Equipment or~~ ECS Modifications and CEMS: Any person required to modify their ECS equipment, system, ~~or CEMS~~ by either reconstructing or adding on new equipment for compliance with this rule shall by (insert 6 months after rule is adopted) file a schedule for the modification with the Control Officer. The plan shall show how the ECS and/or CEMS is to be used to achieve full compliance and shall specify dates for completing increments of progress. Any and all ECS and/or CEMS used to achieve such compliance shall be in operation by 18 months after (insert date of adoption of rule).

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: Any person subject to this rule shall comply with the requirements set forth in this section. Any records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request. ~~The type of Daily records shall vary dependent upon the~~ shall consist of the following information:

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

501.1 Conductance of an initial source test which will establish surrogate parameters which typically include flow rate, flue gas flow rate, flue gas temperature, fuel Btu content, revolutions per minute (if applicable for the unit), load, electrical energy produced, ambient air temperature and pressure and injection rates (if applicable) shall be performed in accordance with the regulations in 40 CFR Part 60.8. Subsequent source testing shall be conducted at a rate of at least once every 5 years.

~~501.1 Fossil Fuel Fired~~ **501.21** Electric Utility Steam Generators: Type of fuel used, amount of fuel used, hours of operation, amount of sulfur in the fuel if liquid fuel is used, hours of operation, initial performance test data for SO₂, NO₂ and PM emissions, test data from the performance evaluation of the continuous monitors, and continuous emissions monitoring records if required.

501.32 ~~Electric Utility Steam Generating Units~~ Electric Utility Combined Cycle Turbine or Stationary Gas Turbine: Type of fuel used, amount of fuel used, hours of operation, amount of sulfur in the fuel if liquid fuel is being used, hours of operation, initial performance test data for SO₂, NO₂ and PM emissions, test data from the performance evaluation of the continuous monitors, average emission rates for each successive boiler operating day for NO₂, and opacity readings receipts continuous emissions monitoring records if required.

501.43 Cooling Towers: Daily Weekly conductivity checks, and monthly gravimetric testing reports for TDS and monthly inspection of cooling tower drift eliminators for proper installation, maintenance and operation. The results of the inspection shall be recorded in a facility log.

~~501.3 Industrial Commercial Institutional Steam Generating Units that have a heat capacity from fuels combusted in the steam generating unit of greater than 100 MM Btu/hour: Type of fuel used, amount of fuel used, hours of operation, annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and each individual fuel fired, initial performance test data for SO₂, NO₂ and PM emissions, test data from the performance evaluation of the continuous monitors, opacity readings, fuel receipts of low sulfur oil~~

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

~~501.4501.1 Industrial Commercial Institutional Steam Generating Units that have a heat capacity from fuels combusted in the steam generating unit of greater than 10 MM Btu /hour but less than 100 MM Btu/hour : Type of fuel used, amount of fuel used, hours of operation,~~

502 **RECORD RETENTION:** Copies of reports, logs and supporting documentation required by the Control Officer shall be retained at least 5 years. Records and information required by this rule shall also be retained for at least 5 years.

503 **COMPLIANCE DETERMINATION:**

503.1 **Monitoring and Testing:** The owner or operator shall monitor, sample or perform testing to quantify emissions of nitrous oxides, opacity, and oxygen or carbon dioxide that may reasonably be attributed to the owner or operator if the Control Officer so requests.

503.21 **Low Sulfur Oil Verification:** Fuel receipts from the fuel supplier indicating the sulfur content of the fuel or verification that the oil used to generate electric power meets the Federal Energy Regulatory Commission (FERC) standard shall be submitted to the Control Officer if proof of sulfur content of the oil is requested by the Control Officer. If fuel receipts per se are not available then a statement of certification or proof of the oil quality as pipeline quality oil shall be sufficient for compliance.

503.32 **Drift factor verification:** Design dDrift factor verification from the manufacturer of the high efficiency drift eliminator used in the cooling towers associated with the applicable fossil fuel burning equipment listed in section 102 shall be obtained from the manufacturer of the eliminator and supplied to the Control Officer if proof of the factor's numerical value is requested by the Control Officer.

~~**502** **RECORD RETENTION:** Copies of reports, logs and supporting documentation required by the Control Officer shall be retained at least 5 years. Records and information required by this rule shall also be retained for at least 5 years.~~

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

5034 TEST METHODS ADOPTED BY REFERENCE: The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1999), as listed below, are adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section are available at the [Maricopa](#) Environmental Services Department, 1001 N. Central Avenue, Phoenix, AZ. 85004-1942. [The ASTM methods \(1998\)](#), and the [Standard Methods listed below \(1995\)](#) are also adopted by reference. When more than one test method [as listed in Section 504.10 or 504.11 and in Section 504.12 or 504.143](#) is permitted for [a the same](#) determination, an ~~exceedance~~[exceedance](#) of the limits established in this rule determined by any of the applicable test methods constitutes a violation ~~of this rule~~.

~~503.1~~**504.1** EPA Reference Methods 1 (“Sample and Velocity Traverses for Stationary Sources”), 1a (“Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts”) (40 CFR 60, Appendix A).

~~503~~**504.2** EPA Reference Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), ~~2a~~**A** (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), ~~2C~~**e** (“Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts”) and ~~2D~~**d** (“Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts”) (40 CFR 60, Appendix A).

504.3 EPA Reference Method 3 (“Gas Analysis for the Determination of Dry Molecular Weight”), [3A \(“Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources \(Instrumental Analyzer Procedure\)”\)](#), [3B \(“Gas Analysis for the Determination of Emission Rate Correction Factor of Excess Air”\)](#), [3C \(“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”\)](#) (40 CFR 60, Appendix A).

504.4 EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A).

~~503.5~~**504.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A) and possibly, if requested by the Control Officer, EPA Reference Method 202 (“Determination of

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

Condensable Particulate Emissions from Stationary Sources”) (40 CFR 51, Appendix M).

504.6 EPA Reference Method 7 ([“Determination of Nitrogen Oxide Emissions from Stationary Sources”](#)), [7A \(“Determination of Nitrogen Oxide Emissions from Stationary Sources”\)](#), [7B \(“Determination of Nitrogen Oxide Emissions from Stationary Sources - Ultraviolet Spectrometry”\)](#), [7C \(“Determination of Nitrogen Oxide Emissions from Stationary Sources - Alkaline-Permanganate Colorimetric Method”\)](#), [7D \(“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate Chromatographic Method”\)](#), [7E \(“Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Method”\)](#) (40 CFR 51, Appendix A).

~~503.7~~**504.7** EPA Reference Method 9 (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A).

504.8 EPA Reference Method 10 (“Determination of Carbon Monoxide Emissions from Stationary Sources”) (40 CFR 60, Appendix A).

504.9 EPA Reference Method 20 (“Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines”) (40 CFR 60, Appendix A).

~~503.8~~**504.10** ~~ASTM~~ American Society of Testing Materials, ASTM Method #D2622-98, (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Disperse X-Ray Fluorescence Spectrometry”), ~~1998 or ASTM method # D1266-98.~~

504.11 American Society of Testing Materials, ASTM Method #D1266-98, (“Standard Test Method for Sulfur in Petroleum Products - Lamp Method”), 1998. ~~or ASTM Method # D2622-98.~~

504.12 American Society of Testing Materials, ASTM Method #D2880-71, ~~78 or 96,~~ (“Standard Specification for Gas Turbine Fuel Oils”), ~~1971, 1978 or 1996.~~

DRAFT RULE 322 – January 18, 2001

For Public Workshop on 2/1/01

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Comments due on 2/16/01

504.13 American Society of Testing Materials, ASTM Method #D4294-98, (“Standard Test method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy”), 1998.

504.14 Standard Methods for the Examination of Water and Wastewater, (“Dissolved Solids Dried at 180°C, Method #2540C”), American Public Health Association, 19th edition, 1995 or ASTM Method 2510B.

504.154 Standard Methods for the Examination of Water and Wastewater, (“Conductivity – Laboratory Method, Method #2510B”), American Public Health Association, 19th edition, 1995 or ASTM Method 2540C.